

TrendLines

SSCRPC — Advising + Planning, + Evaluating + Leading

On The Inside:

- **The Energy Efficiency & Conservation Block Grant Program: P. 2.**
- **Sangamon County EECBG Projects: P. 3-5.**
- **Additional Funding Opportunities: P. 5.**
- **Some Simple Ways to Reduce Municipal Energy Costs: P. 6-9.**
- **Getting Started: Planning for energy efficiency: P. 10-11.**
- **Sources for Additional Information: P. 12-13.**

THE TOPIC: Energy Efficiency and the Local Bottom Line

Because of the recent economic downturn and public resistance to new taxes, counties, cities and villages across the country are trying to find new ways to reduce costs while maintaining consistent levels of public service. Municipal officials are finding that reducing the amount of energy they use to heat and cool public facilities, provide lights and signals on roadways, or run the equipment they operate, can benefit the local bottom line.

Municipalities are often large energy consumers, so even small reductions in their energy bills can result in a palpable gain in the availability of revenues for other purposes. In 2005, for example, the U.S. Dept. of Energy estimated that energy can account for as much as 10% of a local government's annual operating budget. This may not seem like a lot, but finding ways to reduce these costs not only has an immediate effect in reducing local costs, but also has a long-lasting effect since the share of local revenues required to meet energy needs is only likely to grow as energy prices continue to increase.

The Federal government has taken notice of this fact. In Dec. 2008, then President-elect

Obama made a point of noting the effect that reduced energy use by government could have on the nation when he introduced his economic plan, suggesting that simply reducing energy use in public buildings could save the taxpayers billions of dollars each year nationwide.

While some approaches to energy cost reduction may require an initial investment by the local government, there are state and federal programs that may be tapped to help defray these costs. And there are also many simple strategies that can be adopted that do not require large, up-front capital investments.

The purpose of this SSCRPC *TrendLines* is to describe some of the projects that local governments in the SSCRPC planning area are taking to reduce energy costs, and to introduce a few simple energy saving practices that can be beneficial to the municipal bottom line.

On the following page of this issue we describe a new program that brought together the



SSCRPC and a number of state and federal actors to fund municipal energy efficiency and conservation projects in Sangamon County. We also provide brief information about the projects currently funded.

We also suggest a few simple and relatively low-cost actions municipalities can take to reduce their energy costs, and how they might go about planning future improvements.

There are many resources that local officials can call upon to gain additional insight into energy reduction. Some of these we found useful are presented below as well.

The Energy Efficiency & Conservation Block Grant Program



As part of a State and Federal effort to help municipalities in Sangamon County become more energy efficient and conserve resources, the Springfield-Sangamon County Regional Planning Commission (SSCRPC) partnered with the Illinois Association of Regional Councils (ILARC) to provide nearly \$250,000 in Federal American Recovery and Reinvestment Act (ARRA) stimulus funds to support six municipal projects as well as a major Sangamon County energy efficiency effort.

The funding came as part of an Energy Efficiency and Conservation Block Grant (EECBG) obtained from the US Department of Energy by the Illinois Department of Commerce and Economic Opportunity (DCEO).

The funds were made available to incorporated municipalities with a population of 35,000 or less as well as Sangamon County. Eight activities were eligible for funding, all of which indicate approaches that local governments might take to reduce energy use and encourage energy conservation:

- ☐ The development of local energy efficiency and conservation strategies and the identification of viable projects and programs to implement the strategy.
- ☐ Residential and commercial building energy audits to identify ways that residents, businesses and government facilities could reduce energy use.
- ☐ Energy efficiency retrofits of buildings and facilities to reduce energy costs and consumption, such as the installation of insulation, efficient lighting, efficient HVAC systems, weather sealing and the like.
- ☐ Transportation energy efficiency, including the purchase of hybrid, electric or alternative fueled vehicles, or plug-in charging stations for electric vehicles.
- ☐ Building code development and enforcement to implement the Illinois Energy Efficiency Building Act.
- ☐ Source reduction, recycling and recycled content procurement efforts, including curbside recycling, single stream recycling and community drop-off events.
- ☐ The installation of energy efficient traffic signals and street lights.
- ☐ The use of renewable energy technologies — such as solar, wind, fuel cells or biomass — on government buildings.

One-third of the funding available was targeted toward energy efficiency retrofits, effectively making this a priority area. Submitting localities were required to provide at least 25% of the cost of the project from non-EECBG sources, however some of the communities in the Ameren Illinois electric service area were also awarded additional funding by DCEO through the Illinois Electric Efficiency Portfolio program (see page 5), reducing the amount of local funds necessary to implement the projects.

As one indication of the degree to which communities in Sangamon County see the benefit of local energy efficiency and conservation, the requests for funding submitted were more than double the amount that the SSCRPC had available.

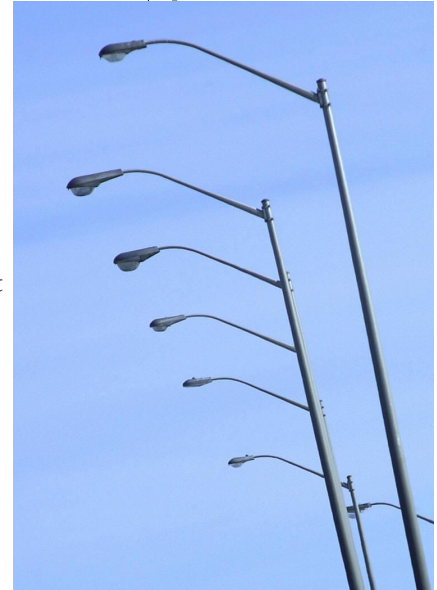
A review committee made up of members of the Commission's Executive Policy Board evaluated and selected the community projects for funding. Ultimately projects were scored based upon such factors as anticipated energy savings, job creation, feasibility of the project, and its scope in terms of total energy savings and conservation. All of the projects funded will reduce energy costs which will result in long-term savings for tax-payers. The next few pages outline the projects funded.

The Sangamon County 2010-2011 EECBG Projects

The Village of Chatham

In support of a \$28,925 project, the Village of Chatham was awarded \$19,120 to retrofit 100 existing street lights with LED lighting. The Village of Chatham has attributed this project to energy concerns arising from village expansion and population growth.

The Village estimates that it can save 55,036 kWh per year if it replaces one hundred 150 Watt NEMA HPS street lights with Lektron LED retrofit kits in the community. At \$0.07 per kWh at wholesale market value, Chatham estimates that it can save \$3,852.52 per year. Over a 20-year span, the village could save over \$77,050.40, or more than twice the initial project cost, plus the incremental cost of replacing an HPS or MV fixture two times in that same 20-year period. The new lighting fixtures would also relieve safety concerns for the general public and businesses as they put out a much brighter light than the current fixtures they use.



The Village of Illiopolis

The Village of Illiopolis was awarded \$9,971 in support of an \$18,584 project to install variable frequency drivers on each of its fresh water well motors. The project is designed to improve the energy efficiency of each fresh water well motor and enhance the capabilities of providing clean water to village residents. See page 7 in this *TrendLines* concerning the value of improving mechanical systems as a simple way to save energy and reduce cost.

The Village estimates that it will save 11.65 tons of coal per year and reduce CO2 emissions by 20.353 Metric Tons by virtue of this project.

The Village of Riverton



For a project totaling \$16,345 in cost, the Village of Riverton was awarded \$11,955 to retrofit 45 existing street lights with LED lighting. The project is aimed at aiding Riverton's electric utility department in providing the most efficient and safe forms of energy and educating the public on using these forms of energy as well.

Riverton plans to replace 45 existing High Pressure Sodium (HPS) lamps located on major roadways and intersections throughout the Village. These lamps will be retrofitted with Light Emitting Diode (LED) lights along the Village's busiest street and adjoining avenue that services the Riverton Village Hall.

In addition to enhancing safety with higher visibility, Riverton estimates that overall GHG emissions and 7.96 tons per year of CO2 will be reduced. Riverton projects that they will also be able to retain two full-time equivalent jobs because of this funding.

Sangamon County EECBG Projects (Continued)

The Village of Rochester



The Village of Rochester was awarded \$14,625 in support of a \$19,500 project to replace existing light fixtures, emergency lights and wall switches in the village hall with energy efficient lighting and occupancy sensors. The goal is to reduce the amount of energy used by village facilities. The Village of Rochester is also willing to host an educational tour after project completion to show the benefits of the new lights.

The Village will install 93 T-8 light fixtures to replace existing T-12 fluorescent light fixtures. The Village will also replace 15 single pole wall switches with occupancy sensor switches. The projected energy savings is 1,127 kWh per month.

Also, with an annual average of \$0.11 kWh per month, the Village projects that they will be able to save approximately \$1,500 annually. The Village of Rochester also predicts that they will be able to retain one full-time equivalent job with this project. Page 7 of this issue of *TrendLines* discusses savings that can be obtained from such simple changes in lighting.

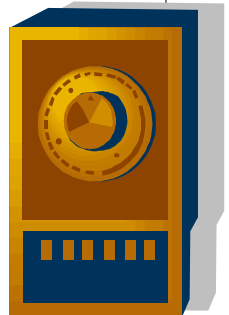
The Village of Sherman

The Village of Sherman was awarded \$7,050 in support of a \$19,425 project to upgrade street light fixtures from high pressure sodium to induction fixtures. The Village desires to use this project as a pilot program for induction street lights. If the lighting proves to be adequate, then Sherman will consider revising the Village Code to require induction street light fixtures for all future street lights.

The Village of Sherman will replace twenty-five existing 150 Watt HPS light fixtures with new induction light fixtures. The Village estimates that it will have average savings of \$1,325 annually and 9,000 kWh per year. This means that the savings anticipated will pay for the cost of the project in less than 15 years. In addition, Sherman projects 0.11 full-time equivalent jobs will be created and 0.10 full-time equivalent jobs will be retained.

The Village of Williamsville

The Village of Williamsville was awarded \$17,265 in support of a \$24,620 project to replace the existing HVAC system in the village hall with a more energy efficient unit. The project is designed to reduce energy use and utility costs as well as increase the use of the building for community and private events.



The Village will contract with a vendor to remove and dispose of the current HVAC system and install four new 95% 80,000 BTU furnaces. The existing AC units will also be removed and replaced with new 14.8 SEER AC units. Project completion will provide an estimated 35% annual reduction of utility costs, saving the Village money. The project will also save 3,240 kWh and 780 therms of energy savings per year. In addition, the project is predicted to retain two full-time equivalent jobs. Page 8 of this *TrendLines* addresses energy savings that can be from better HVAC maintenance and system improvements.

Sangamon County EECBG Projects (Continued)

Sangamon County

Sangamon County was awarded \$169,531 in support of a \$759,849 project to replace two existing central plant water chillers in the Sangamon County Courts and Detention Facility with two energy efficient units. This project is part of a bigger comprehensive energy management program that Sangamon County is developing to aggressively reduce the amount of energy consumption the Sangamon County Complex currently uses.

The project is designed to replace the existing 415 ton central plant water chillers with new 375 ton water chillers to provide more a more efficient system that chills water for the air handling units located in the buildings that house the Sangamon County courts, offices and detention facilities. The project is estimated to save 198,518 kWh per year and \$21,402 annually. Also, Sangamon County also predicts that it will create a total of 14 full-time equivalent jobs with this project. This project is being done under a performance contract, such as is mentioned on page 11 of this *TrendLines*.



Some Additional Funding Opportunities

While the projects outlined above were provided funding through a USDOE Energy Efficiency and Conservation Block Grant, other sources of financial support are available. The Illinois Department of Commerce and Economic Opportunity (DCEO) can provide additional information at www.illinoisenergy.org or www.ileeps.org. Many of the programs listed above received financial support from the Illinois Energy Efficiency Portfolio program, known as EEPs. Communities in the ComEd or Ameren Illinois service areas may apply for EEPs. EEPs programs are focused on public facilities. They include:

The Public Sector Standard Incentive Program

This program provides grants and rebates to public sector entities to improve the efficiency of equipment to reduce the amount of electricity required. It can provide standard incentives for a specific list of electric energy efficiency measures. Measures include energy efficient lighting, motors, variable frequency drives, cooling equipment, traffic signals and exit signs, among others. For more information the DCEO contact is: Andrea Reiff, 217/785-0164, <andrea.reiff@illinois.gov>.

The Public Sector Custom Incentive Program

This program provides grants to encourage facilities to improve the efficiency of equipment or process to reduce the amount of electricity required. It provides incentives for facility improvements that reduce the electricity use for measures not specifically listed in the Public Sector Standard Incentive Program. DCEO contact: Tom Coe, 217/785-2433, <tom.coe@illinois.gov>.

The Public Sector New Construction Incentive Program

This program provides grants to encourage applicants to design new construction to achieve the greatest level of energy efficiency. It can provide incentives for facility design improvements beyond code. Incentive levels increase for additional percentages beyond code. Modeling from DOE2 or ComCheck required. There is a bonus for LEED seeking projects. DCEO contact: Tom Coe, 217/785-2433, <tom.coe@illinois.gov>.

Retro-Commissioning Program

Provides funding to identify and implement low-cost tune-ups and adjustments that improve the efficiency of existing public buildings' operating systems by returning them to intended operation or design specifications. It focuses on building controls and HVAC systems. DCEO contact: Tom Coe, 217/785-2433, <tom.coe@illinois.gov>.

Some Simple Ways to Reduce Municipal Energy Costs

In May of 2007, the International City-County Management Association (ICMA) conducted an informal survey of its members that included a number of questions asking what communities were doing to increase energy efficiency and reduce energy costs. Over 80% of respondents said that they saw a need for additional information as to how local governments could reduce energy



use in their public buildings. This shouldn't come as a surprise, because data collected by the U.S. Energy Information Administration in conjunction with Architecture 2030 — a nonprofit organization addressing issues related to climate change — indicated that commercial, industrial and residential buildings are responsible for 48% of energy consumption.

An obvious place for local governments to start reducing energy use is improving the energy efficiency of their own buildings, which includes office buildings, police and fire stations, and in some jurisdictions, schools and locally owned utilities.

Writing in the Oct. 2007 issue of ICMA's magazine *Public Management*, Danielle Miller contends that reducing energy consumption is a three step process. The first step involves such simple actions to reduce costs as reprogramming sleep modes on computers, having employees regularly turn off computers and lights at the end of each work day, and making sure that heating and cooling systems run efficiently.

The second step calls for local governments to pick off what Miller calls "low-hanging fruit". These actions require only limited investments, and include such things as changing from incandescent to high-efficiency light bulbs in public buildings, street lighting and traffic lights. It also includes using sensors to activate lighting, upgrading "leaky" windows and installing double-paned energy efficient models, and purchasing Energy Star rated equipment and appliances.

Step three is more extensive, and includes replacing existing HVAC systems with higher-efficiency equipment, retrofitting buildings to Leadership in Energy and Environmental Design (LEED) standards, or even establishing "green roof" programs and projects.

But there are some simple, and often low cost, ways for municipalities to reduce their energy use. The following ways to reduce local government energy costs are taken from ten ways identified by Emily Neill of the Massachusetts Municipal Association in an article for that association's publication, *Municipal Advocate* (Vol. 23, No. 4: pp. 16-18). The SSCRPC suggests that Sangamon County municipalities review Ms. Neill's article for additional detail.



Reduce lighting costs

Neill reports that studies for Energy Star, a joint effort of the U.S. Environmental Protection Agency and U.S. Dept. of Energy, have found that “lighting consumes twenty-five percent to thirty percent of energy in commercial buildings and is a primary source of heat gain and waste heat.” This means that simple measures – if implemented – could reduce municipal energy use. These include:

- Installation of occupancy sensors for rooms and closets;
- Motion sensors or time clocks on exterior security lights or lights serving parking lots;
- Adjusting light levels to meet, rather than exceed, occupancy needs;
- The removal of unnecessary lamps, ballasts or fixtures;
- Switching from the older T-12 lighting technology to newer, more efficient technology.

In this last case, and according to Neill, while the pay-back period for switching from T-12 lighting to Super T-8 with electronic ballasts may be three years or more, the long-term savings will make the retrofit worth it.



The SSCRPC has found in its own operations that some simple actions can lead to both reduced energy costs and increased employee awareness of energy efficiency and conservation. For example, when an employee leaves his or her office, make it a practice that the employee turn out the lights in that office. Make it a practice not to leave lights burning in conference, snack or other general purpose rooms when no one is using them. These simple changes in office routine can have a measurable effect on the bottom line over time.

Also as Neill points out, it doesn't get much easier than changing a light bulb, and one of the ways of decreasing municipal energy use is the switch to compact fluorescent light bulbs (CFLB's). Fluorescent light bulbs use less electricity than standard incandescent bulbs, with, according to Neill, each fluorescent bulb saving:

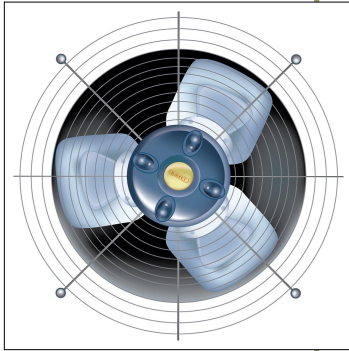
...approximately 330 kilo-watt hours of electricity over its life, translating to a reduction of about 400 pounds of carbon dioxide and other pollutants. An additional benefit is that compact fluorescents generate seventy percent less heat than standard bulbs, reducing the need for air conditioning and cutting electricity use another twenty percent...

There are some disadvantages in using compact fluorescent bulbs. The first is that at the present time they are more expensive than similar incandescent bulbs, but this cost differential is decreasing as more consumers switch to CFLB's, and studies indicate that CFLB's have a longer life-span than incandescent. The second disadvantage is that CFLB's contain very small amounts of mercury. This means that they should not be disposed of like common trash, but through appropriate recycling or disposal centers. More of these are being set-up all the time, and Neill says that information about them can be found at www.earth911.org.

Consider mechanical systems

For example, municipal water and wastewater systems account for 2% of the nation's electrical energy use due to the pumps required. The good news is that a 20% reduction in this use is possible with improved pumping equipment, such as the installation of variable speed drives (VSD). Changing pumping equipment is not a simple or low cost solution to energy conservation, but it can be something that municipalities can consider when upgrading water and wastewater systems, or planning new pumping facilities.

Address heating and air conditioning



Neill reports that heating, ventilation and air conditioning systems “account for forty percent to sixty percent of the energy used in commercial and residential buildings”, making them prime candidates for energy efficiency efforts.

Yet this does not mean that savings can only arise from expensive system replacement. As Neill points out, “Scheduled maintenance on HVAC systems, such as cleaning burners and air conditioning coils, replacing and cleaning air filters, and checking ducts and pipe insulation for damage, can maintain efficiency.” If a public building is dependent on boiler for heating, the boiler is most often the largest source of energy use in the building. Proper boiler maintenance “can lead to energy savings of ten percent to twenty percent, as well as reduced emissions, extended equipment life, and increased building occupant comfort.”

Along with heating, an inefficient air conditioning system also adds to municipal energy costs. Energy costs associated with air conditioning can be decreased if such common problems as dirty filters and fans, improper belt alignment and adjustment, air leaks in equipment cabinets and ducts, improper air damper operation, dirty condenser and evaporator coils, and improper refrigerant charge, are addressed as part of a regular maintenance agenda.

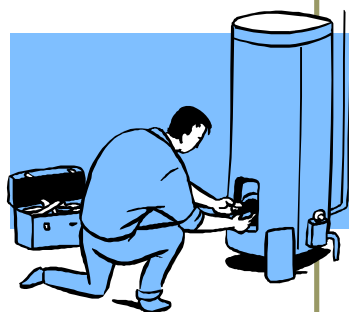
Energy use can also be reduced through the proper monitoring of thermostats. As Neill suggests, “Programmable thermostats, with a cost premium of \$50 to \$200, are highly cost-effective”.

Office equipment energy reduction

Of course office equipment uses energy as well. Municipalities in the market for new office equipment can reduce energy use by selecting Energy Star-rated equipment. Neill reports, for example, that Energy Star copiers may use 40% less electricity than non-Energy Star counterparts. Equipment with “sleep” modes can also save energy. For example, fax machine models “with the lowest available power level in ‘sleep’ mode will save energy, since most fax machines are in standby mode most of the time”, Neill reports.

Savings can even be found with existing equipment. Office equipment can be shut off at night and on weekends to save energy. Shutting down computers “at night – even those with a low-power sleep mode – will save energy and possibly extend the life of the computer”, Neill suggests. When employees are going to be away from their computer for some time, energy can be saved by just turning off the monitor, as the monitor may consume two-thirds of the energy cost of the entire individual computer station.

Consider water heating



Water heating can also increase energy costs. Energy can mainly be saved in two ways. The first is to not let leaks in hot water systems go unresolved. Hot water systems require the same maintenance attention as HVAC systems, and the burners of gas or oil-fired water heaters should be tested annually.

Reducing water temperature is also a way to save energy and money. If a municipal building only needs water hot enough for hand washing and other general uses, a temperature of no more than 120 degrees is all that is required. Even a lower temperature can be sufficient.

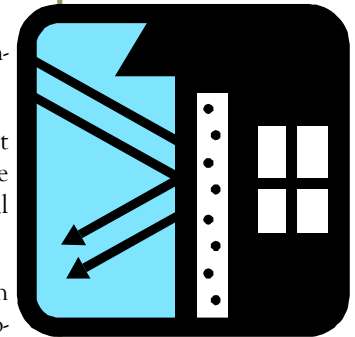
Improve insulation and exteriors of public buildings

Neill points out that a large part of the energy loss from a building is often due to its “outer-envelope”. Newly constructed buildings are typically more energy efficient, but most public buildings are older designs, often constructed years ago when energy costs were of less concern.

Doors and windows are major sources of energy loss and provide a good starting point to identify savings. They should close tightly and be inspected for leaks.

Adding insulation to a public building has energy saving benefits in both winter and summer. It can be less expensive to add insulation to a newer building, but with older buildings it may be more cost effective to focus on roofs and attics as it is easier and cheaper to provide additional insulation there.

Also consider the implications of exterior landscaping. As Neill points out, “Deciduous trees on the south and west sides of a building, where the sun’s rays are most direct and intense, can provide energy-saving shade in the summer as well as solar warmth in the winter, when the trees have lost their leaves. Winter heating costs can also be reduced by planting evergreen trees or shrubs as windbreaks.”



Consider vehicle use and maintenance

While a lot of attention has been given to hybrid and electric vehicles as ways to reduce energy costs, municipalities can achieve costs savings simply by improving the maintenance of existing vehicles and changing use patterns. In the short term fuel costs can be held down by drivers observing the speed limit and not driving aggressively. Also, gasoline purchases should be consistent with the grade called for in the vehicle’s owners manual. Keeping tires at the recommended pressure and following recommended service schedules can also reduce energy use.

In the longer-term, municipalities can take into account fuel economy and the ability of a vehicle to use alternative fuels when new vehicles are purchased.

Get staff and building occupant buy-in

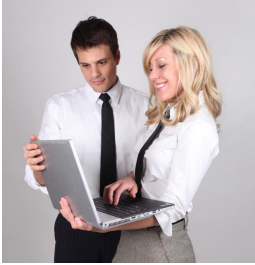
The advice listed above provides a number of low-cost ways to increase energy efficiency and reduce municipal energy costs, but all require buy-in from staff and public building occupants. Neill suggests that municipalities get the ball rolling through a successful first project. A lighting upgrade, for example, not only decreases energy use, but does so in a way that allows both management and staff to actually see the results. This sort of early success can build support for other energy conservation initiatives.

Equally important to achieving support is the education of both management and staff about energy efficiency and how it can be accomplished. This helps all involved understand the purposes for the effort and become more accepting of any new practices that will be required.

And energy efficiency and conservation practices need not be limited only to the local government. Residents and businesses can enjoy the financial advantages of smarter energy use, helping the city or village achieve a larger impact than it could on its own.

The next few pages of this *TrendLines* suggests a six-stage approach for starting to plan for municipal energy savings.





Getting Started: Planning for Energy Efficiency

Facing increasing energy costs in light of additional public service demands and limited budgets, how might local governments in Sangamon County go about addressing the financial opportunities that more efficient energy use provides? The Vermont Sierra Club (*Guide to Improving Energy Efficiency in Vermont Municipal Buildings*, by Paul Markowitz, 2009) suggests to municipalities in that state that they consider a simple six step approach. The SSCRPC believes that this step-by-step roadmap is as applicable to communities in Illinois as it is to ones in Vermont.

First, form a team. Bring together individuals in your community that have an interest in reducing municipal energy costs. This team or committee can play an important role in assessing energy use and identifying where investments in energy reduction might be made. This can include gain-

ing support for the process and investments, conducting outreach efforts to the public, and helping the community gather the information it needs to secure funding when it is necessary. If possible, and along with local officials, include individuals in the energy efficiency/building trades, people with economic or financial backgrounds, those with writing skills (to help draft grant proposals), and organizational skills. It is also beneficial to include local business owners, members of local environmental groups and community organizations, longtime residents as well as newcomers, and others interested in committing time and energy to the task.

Second, build support for the effort. Energy reduction efforts often fail without community support. This means that both local decision makers and the general public need to understand the value of energy reduction to both the environment **and** the bottom line. Efforts need to be undertaken to provide information about energy improvements, their associated costs and savings, and the payback period. Keep in mind that improving energy efficiency is not just a governmental decision, but a business one.

Third, compile data on your “municipal energy bill”. Most communities have very little information about energy costs as they are often embedded in various departmental budgets and line items. Some basic actions for identifying your local energy bill include:

- ☐ Collecting information for a one-year period on energy use. You might tie this period to your fiscal year or your town’s annual report period, if one is produced.
- ☐ Compiling electrical and fuel bills for each of your facilities.
- ☐ In addition to facility energy use, look at municipal vehicle fuel bills and electrical bills for such things as street lighting.

What to Look for During a Walk-Through Assessment

- ☐ How old is the heating and distribution system? If there is a boiler, in what year was it installed? What type of fuel does the system use?
- ☐ What is the total square footage of the building and how much of the space is conditioned (heated or cooled)?
- ☐ How many electric meters are there and where are they located?
- ☐ What do the windows look like, and how old are they? Are the seams filled with caulking?
- ☐ What types of light fixtures are present throughout the building?
- ☐ Where are the thermostats and are they programmable?
- ☐ Are there air leaks in the doors, or areas of the building that should be better insulated (e.g. the attic, basement or exterior walls)?
- ☐ Are heating pipes or ducts insulated? Check crawl spaces and dropped ceilings for pipe/duct runs.
- ☐ What type of electronic equipment is there throughout the building? How many of each? Are power strips utilized to shut down computers/equipment at night?

From the *New Hampshire Handbook on Energy Efficiency & Climate Change: Vol. II.*

This will give you a good start. Use this information to compile data on how much your community spent on energy over the past 5, 10 and 15 years. This will give you an idea as to how your energy use and costs have changed over time. You might also want to prepare estimates of future energy costs using some cost escalators (2%, 4%, 6%, etc.) This will give you an idea as to how energy cost increases might affect your bottom line over time.

Fourth, identify energy saving opportunities. You can do this in several ways. For example you might conduct a walk-through energy assessment of municipal buildings. Some things to look for in a walk-through are shown in the box on Page 10. You could also hire a professional to conduct an energy audit. Sometimes utilities serving localities will provide such an audit at no cost as a service to the customer.

A complete energy audit includes most or all of the components shown in the box to the right.

Fifth, decide on a funding approach. As noted previously, there are a number of actions municipalities can take to reduce energy use that have little if any cost. But other improvements may require upfront capital investments that pay for themselves in reduced energy costs over time. Energy conservation activities ought to be considered along with other public investments that a community makes. Markowitz notes that in general, energy efficiency improvements can often yield a return on investment of 10% to 20% or more, depending upon the measure. Of course, the more inefficient a municipality's facilities — or the higher energy prices rise — the greater the return on the investment and the quicker the pay-off period.

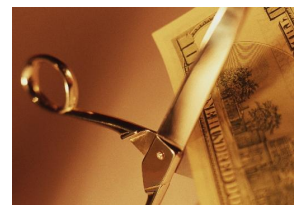
Municipalities have a variety of options to fund efficiency measures. These of course include the use of any discretionary funds earmarked for building repairs and maintenance, the inclusion of efficiency projects as part of the annual budgeting process, bonding for projects, entering into energy saving performance contracting (which involves an agreement with a private energy service company which identifies and evaluates energy-saving opportunities, with the package of improvements to be paid for through the energy savings, with the company paying the difference if they do not materialize), and various grants. Several potential sources for State grant funding were provided earlier in this *TrendLines*. Others exist as well.

And finally, undertake the efficiency improvements and monitor the results. After your energy improvement plan is implemented, the community's work is not complete. The team or committee established to help lead the effort should continue to work, not just to identify other energy cost saving opportunities, but to monitor the results of the work already done. Part of this effort should include comparing the estimated savings with the real savings after a year to determine whether your project or projects met or, potentially, exceeded expectations.

Often efforts such as those mentioned above are conducted for good environmental reasons, and it is important for local governments to be good stewards of the environment. But as we have tried to point out in this *TrendLines*, reducing municipal costs by increasing energy efficiency is simply good business. It's good for the bottom line and is another way in which local governments can reduce their costs as well as potentially reduce the local taxpayer's burden.

An Energy Audit Includes

- ☐ Visual inspection of the building envelope from top to bottom.
- ☐ Visual inspection of insulation levels and possibly an infrared scan.
- ☐ Air leakage (blower door) test.
- ☐ Health and safety diagnostic testing, including moisture evaluation, combustion safety testing, and carbon monoxide detection.
- ☐ Recommendations for electrical upgrades, such as lighting and appliances.
- ☐ Audit report.



Sources of Additional Information



We have already mentioned information resources available through the **Illinois Department of Commerce and Economic Opportunity**, but there are many sources available to help local governments find out more about what they can do to reduce energy costs. The following is but a small sample of the national agencies and organizations addressing energy efficiency and conservation that have helpful resources available.

- Along with sponsoring the Energy Efficiency and Conservation Block Grant program, the **U.S. Department of Energy** has many useful resources available that can be accessed on their website. Particularly check out the information made available by the Office of Energy Efficiency and Renewable Energy on the USDOE website (www.energy.gov) and its activities to help governments become more energy efficient.
- **U.S. Environmental Protection Agency** also has resources available. See particularly information provided by the State and Local Climate and Energy Program: www.epa.gov/cleanenergy/
- The **ENERGY STAR Program** also has helpful information at www.energystar.gov. See their “ENERGY STAR Building Upgrade Manual”, “ENERGY STAR Challenge Training for Local Governments”, “Financing Energy Efficiency Projects”, and “Local Governments: An Overview of Energy Use and Energy Efficiency Opportunities”.
- **U.S. Department of Energy Building Technologies Program** can also be of help to local governments. Go to www.eere.energy.gov/buildings/.
- The **U.S. General Services Administration’s Sustainable Design Program** can provide helpful information. This program can be found through GSA’s website, www.gsa.gov.
- **National Institute of Building Sciences** “Whole-Building Design Guide” can also be of use to communities considering new facilities as well as retrofits. See www.wbdg.org/
- **U.S. Conference of Mayors** maintains some information on local government energy efficiency. Their website is www.usmayors.org. Particularly see “Selected Best Practices for Successful City Energy Initiatives”.
- See the information available from the **National Association of Counties** (NACo): www.naco.org. This includes NACo’s publications “Counties and Residential Green Building Standards”, “Energy Guide: Achieving Energy Efficiency in County Facilities”, and “Guide to Greening Government Through Powerful Purchasing Decisions”.



There are also a number of resources specifically addressing energy efficiency in local government facilities and operations. These include::

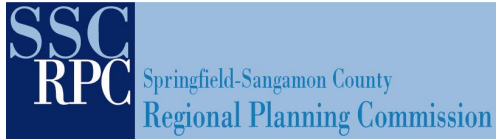
- The **American Institute of Architects'** "Building Investment Decision Support": www.aia.org/aiaucmp/groups/ek_public/documents/pdf/aia080050.pdf
- The **Idaho Dept. of Environmental Quality's** "Energy Conservation Tips for Local Governments": www.deq.state.id.us/multimedia_assistance/p2/gov_energy_conserve_fs.pdf
- The "Energy-Aware Planning Guide" from the **California Energy Commission**: www.energy.ca.gov/energy_aware_guide/index.html
- The Portland, Oregon, **Office of Sustainable Development** makes available a "Guide to Greening Your Bottom Line Through a Resource-Efficient Office Environment". Go to www.rmi.org/images/other/GDS/GDS-GrnOfficeGuide.pdf.
- See the **Flex Your Power** best practices guide "Reduce Energy Use in Local Government Facilities Through efficiency Improvements" at www.fypower.org/bpg/index.html?b=institutional
- A **Sierra Club** report, "Sustainable Cities: Best Practices for Renewable Energy & Energy Efficiency", highlights a number of cases involving larger municipalities. It can be found at <http://rmc.sierraclub.org/energy/library/sustainablecities.pdf>



Also, please see the original works by **Danielle Miller**, ICMA , **Emily Neill**, Massachusetts Municipal Association, and **Paul Markowitz**, Vermont Sierra Club, which we found valuable in the preparation of this *TrendLines*.

The SSCRPC encourages Sangamon County communities to share the information that they find, as well as their energy conservation success stories, with other municipalities in the planning area. Information and examples may be submitted to the Commission, and these will be shared with other partners in the SSCRPC's information network.

Plans are underway to share the results of the current EECBG funded projects with community leaders in the SSCRPC planning area. For more information on EECBG activities, contact Jeff Fulgenzi, SSCRPC Senior Planner for Strategic and Comprehensive Planning, at 217-535-3110, or email the Commission at sscrpc@co.sangamon.il.us.



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Regularly Scheduled Events:

- ❑ **The Springfield-Sangamon County Regional Planning Commission meets in the Sangamon County Board Chamber at 9:30 AM on the third Wednesday of each month unless otherwise posted.**
- ❑ **The Springfield Area Transportation Study Technical Committee meets in Room 212 of the County Building at 8:30 AM on the first Thursday of each month, with the Policy Committee meeting at noon on the following Thursday, unless otherwise posted.**
- ❑ **The Sangamon County Historic Preservation Commission will meet in Room 212 of the County Building at 4:00PM on the first Wednesday of every month unless otherwise posted.**

A complete schedule of SSCRPC events is maintained on the Commission's website.

ANY SSCRPC DOCUMENTS NOTED IN THIS TrendLines, AS WELL AS OTHER ANALYTIC WORK ON CURRENT TOPICS OF INTEREST, ARE AVAILABLE ON THE COMMISSION'S WEBSITE.

About the Springfield-Sangamon County Regional Planning Commission



The Springfield-Sangamon County Regional Planning Commission (SSCRPC) is the joint planning body for the City of Springfield and Sangamon County. Along with this on-going responsibility, the Commission works with many other municipalities, public agencies, and public-private entities throughout the region to promote orderly growth and development.

Through the work of its professional staff, the Commission provides overall planning services related to land use, housing, recreation, transportation, economics, and the environment, as well as special projects of local and regional interest.

In carrying out its tasks, the SSCRPC conducts numerous research studies, analytic reviews and planning projects each year.

The SSCRPC prepares area-wide planning documents and assists the county, cities, and villages, as well as special districts, with planning activities. The staff reviews all proposed subdivisions, makes recommendations on all Springfield and County zoning and variance requests, and serves as the Floodplain Administrator.

It also acts in regional capacities, for example serving as the Metropolitan Planning Organization for transportation planning, directing the development of the Sanga-

mon Regional Comprehensive Plan, and serving as the A-95 review clearinghouse.

The Commission that oversees this work is made up of 17 members including representatives from the Sangamon County Board, Springfield City Council, special units of government, and six appointed citizens from the city and county.

The Commission's Executive Director is appointed by the Executive Policy Board of the Commission and confirmed by the Sangamon County board. He serves as County Plats Officer and also oversees the County's Department of Zoning.